Claims

1. A manufacturing method for manufacturing a multilayer film optical member, comprising:

an injection step in which an UV-curable liquid crystal is injected into a space between a pair of transparent substrates, with a transparent conductive film disposed on each of the transparent substrates;

a first radiation step in which ultraviolet light beams, each ultraviolet light beam being a parallel coherent light beam, are radiated onto the UV-curable liquid crystal through the pair of transparent substrates from two sides of the UV-curable liquid crystal; and

a second radiation step in which ultraviolet light achieving uniform intensity on a surface of the transparent substrate is radiated onto the UV-curable liquid crystal through the transparent substrate while applying an electrical field between the pair of transparent conductive films.

2. A manufacturing method for manufacturing a multilayer film optical member, comprising:

an injection step in which an UV-curable liquid crystal is injected into a space between a pair of transparent substrates;

a first radiation step in which ultraviolet light beams, each ultraviolet light beam being a parallel coherent light

beam, are radiated onto the UV-curable liquid crystal through the pair of transparent substrates from two sides of the UV-curable liquid crystal; and

a second radiation step in which ultraviolet light achieving uniform intensity on a surface of the transparent substrate is radiated onto the UV-curable liquid crystal through the transparent substrate while holding in a magnetic field the UV-curable liquid crystal having been injected into the space between the pair of transparent substrates.

3. A manufacturing method for manufacturing an UV-curable liquid crystal according to claim 2, wherein:

the second radiation step is executed by selecting a desired orientation for the magnetic field relative to surfaces of the pair of transparent substrates.

4. A manufacturing method for manufacturing an UV-curable liquid crystal according to any one of claims 1 through 3, wherein:

during the first radiation step, an angle of incidence of light radiated onto the UV-curable liquid crystal from one side is set equal to an angle of incidence of light radiated from another side.

5. A manufacturing method for manufacturing an UV-curable liquid crystal according to any one of claims 1 through 4, wherein:

the first radiation step is executed by designating one of radiation intensity and a length of radiation time of light radiated onto the UV-curable liquid crystal from one side and one of radiation intensity and a length of radiation time of light radiated from another side as variables.

6. A manufacturing method for manufacturing an multilayer film optical member according to any one of claims 1 through 5, wherein:

the ultraviolet light achieving uniform intensity, that is radiated in the second radiation step, is non-coherent light.

7. A manufacturing method for manufacturing an multilayer film optical member according to any one of claims 1 through 6, further comprising:

after ending the second radiation step, a separation step in which the multilayer film optical member is separated from the transparent substrates is executed.

8. A multilayer film optical member manufactured through the manufacturing method according to any one of claims 1 through 7.

9. A multilayer film optical member, comprising:

a plurality of liquid crystal layers oriented along directions different from one another and layered one on top of another.